

Title: Compositions, Kits, and Methods for Identification, Assessment, Prevention, and Therapy of Psoriasis **Filed:** ~~He~~ 11/14/14
Inventor: William L. Tropicchio, et al. **Atty. Docket No.:** GFN-5405
Attorney: Amy E. Mandragoras, Esq., Reg. No. 36,207, LAHIVE & COCKFIELD, LLP, 28 State Street, Boston, MA 02109-1784
 Sheet 1 of 12
 Express Mail Label No.: EL 746 157 896 US

CYCLOSPORIN A TREATMENT OF PSORIASIS

	Patient #301				Patient #302		Patient #304		
PSI score	9	9	7	10	8	3	9	6	3
Weeks	0	1	4	8	0	4	0	1	4
SCCA2	448	514	260	302	211	3	569	104	3
PI3	501	594	329	313	309	3	661	118	3
SCCA1	83	146	89	72	43	3	44	80	3
S100A9	482	565	318	296	381	14	646	284	3
SPRR2A	438	377	293	277	174	4	592	99	6
G1P2	15	11	18	18	88	4	106	21	3
GJB2	40	78	45	42	37	3	34	41	3
HAL	40	69	30	45	36	3	48	77	4
IFI56	12	5	11	11	26	3	14	12	2
MX1	30	27	28	23	27	5	57	20	3
S100A12	25	25	8	13	10	2	35	6	2
TGM3	113	103	67	77	42	3	122	23	7
IFNRG7A	17	4	12	9	18	2	20	11	3
HBP17	37	24	27	26	45	6	48	16	7
S100A7	424	618	268	262	363	67	596	365	5
TGM1	85	60	43	49	44	3	56	12	4
ATPIAL1	18	24	16	21	15	3	59	10	3
LKYHYD	16	21	14	11	8	3	21	7	3
SQLE	37	32	24	26	17	3	56	30	6
KCNC3	21	15	11	14	24	3	36	4	2
SPRR1B	295	410	223	203	234	20	393	159	49
LGALS3BP	35	39	26	21	24	6	39	26	3
PPI3	18	14	11	12	5	2	22	7	3
CYBA	5	3	7	4	4	3	3	9	4
PRSS6	139	100	95	77	49	5	145	56	17
S100A2	350	308	226	229	300	69	477	96	26
PLSCR1	12	7	7	8	11	2	18	3	2
KRT17	395	338	227	189	249	14	356	45	2
ID1	96	120	94	46	58	29	82	63	26
CRABP2	161	125	133	109	150	20	221	55	15
FABP5	178	231	193	173	120	35	201	186	54
RB1	10	13	9	6	10	4	14	8	4
CSNK1A1	12	33	18	20	10	4	16	21	5
IL4R	29	22	19	16	13	3	35	5	4
STAT1	21	37	16	16	13	3	30	20	4
TOP1	23	30	13	13	7	7	47	15	7
NP	38	34	27	26	20	4	36	21	3
GNA15	39	28	26	23	17	2	9	4	2
PGD	14	10	6	8	4	2	46	12	6
RANBP1	30	21	21	21	18	4	9	6	3
K238_PERML1	5	9	10	4	7	3	18	4	3
UBE2F	12	4	8	6	7	3			

FIGURE 1

Title: Compositions, Kits, and Methods for Identification, Assessment, Prevention, and Therapy of Psoriasis **Filed:** Herewith
Inventor: William L. Tropicchio, et al. **Atty. Dock:** [REDACTED] GPN-5405
Attorney: Amy E. Mandragouras, Esq., Reg. No. 36,220, LAHIVE & COCKFIELD, LLP, 28 State Street, Boston, MA 02109-1784
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BENE	34	37	20	18	10	5	34	11	5
IRAK1	42	36	42	26	25	9	50	40	10
TUBB2	111	111	103	93	37	15	98	112	34
ELP1	27	35	21	24	7	3	36	25	5
IFI27SEP	161	97	119	92	149	38	185	57	30
PCS4	46	56	24	39	21	4	45	31	7
K111_NUK34	73	53	48	44	27	7	73	41	12
EIF5	21	17	11	11	5	2	21	9	4
TSSC3	28	13	11	17	20	4	29	8	4
LDLR	20	20	8	10	15	4	19	11	5
GOT2	33	26	20	22	18	5	30	16	6
GARS	43	49	45	42	26	11	39	62	15
PHB	17	14	14	14	10	2	13	3	2
EIF2B	46	40	40	35	22	8	35	22	8
RAB1	20	26	12	15	6	3	22	16	4
EFELL2	8	10	6	6	4	3	7	5	3
STAT3	33	28	19	23	14	5	36	8	3
PPP2CA	17	11	11	11	8	3	22	14	6
OIAS	28	26	26	21	14	7	15	16	10
UBECS	21	16	15	14	13	7	38	7	5
EIF2A	31	24	14	15	11	5	28	11	8
PSMB10	30	13	18	13	20	6	39	10	3
PRKMK3	19	12	11	8	5	4	18	8	6
GSTP1	314	229	220	199	191	52	480	79	25
S100A11	175	92	82	105	98	20	165	55	28
CSTB	169	239	130	151	105	11	285	68	19
ATOX1	55	39	38	37	24	10	55	31	11
CDC25	20	15	9	8	11	4	21	11	4
LAD1	82	56	46	46	35	11	86	33	14
P55CDC	20	13	13	12	15	6	32	5	4
PRPHIH	54	43	42	41	24	7	67	24	7
PGAM1	124	138	105	90	62	22	123	91	31
TB3_1	17	15	10	13	6	4	15	9	3
SCY44	4	6	4	4	4	3	9	4	3
E_23773	13	12	8	8	8	3	13	9	3
MDF1	6	11	6	3	5	3	5	4	2
CASP	9	10	3	7	9	3	15	7	4
GPX3	38	30	29	20	25	6	43	14	5
EIF5A	3	4	3	4	8	3	4	3	2
CBR	15	36	7	17	16	8	21	49	13
COX5A	40	35	32	28	16	4	51	30	6
HSN	76	78	51	54	51	24	63	44	17
PSMHSC7	70	44	41	41	27	11	61	20	14
UQCRCFS1	45	46	33	36	23	8	43	47	15
MSE55	20	10	15	13	13	4	15	7	2
CYB561	5	5	3	4	4	2	6	4	3
CDKN3	7	8	5	7	6	3	17	3	3
CD48	6	4	4	4	7	3	4	5	3
SEC23B	13	6	8	7	4	2	18	3	3
MAGEP15	18	24	14	14	8	4	15	16	4
DLD	9	11	4	7	5	4	6	10	4

FIGURE 1 CONT.

Title: Compositions, Kits, and Methods for Identification, Assessment,
 Prevention, and Therapy of Psoriasis **Filed:** Herewith
Attorney: William L. Trepicchio, et al. **Atty. Docket No.:** 15405
Counsel: Amy E. Mandragouras, Esq., Reg. No. 36,207, LARIVÉE &
 COCKFIELD, LLP, 28 State Street, Boston, MA 02109-1784
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P4HB	120	115	88	73	46	31	149	76	25
TPI1	139	87	80	102	74	29	144	41	22
BTG3	21	27	22	19	14	6	19	20	10
ARF6	6	10	9	8	7	4	7	11	4
PYRIDK	10	2	4	4	4	2	13	2	2
ITBA2	16	10	14	8	8	3	23	10	4
CSNK1E	4	11	9	6	10	5	6	21	8
SDC4	24	15	16	15	16	18	22	13	17
TESK1	4	3	2	2	3	4	2	3	4
SPTAN1	9	4	6	4	4	4	4	5	6
METPEP	37	17	22	43	23	46	42	32	38
TMEM1	2	2	3	3	2	7	2	4	5
KRT2A	85	62	157	180	56	188	172	110	230
CRIP1	14	4	16	10	9	13	11	7	15
CST6	54	39	61	47	23	36	102	136	83
IGGFBCP	2	3	3	3	2	9	3	4	5

=genes that increase in gene expression greater than 2 fold when compared to uninvolved skin

=genes that decrease in gene expression greater than 2 fold when compared to uninvolved skin

FIGURE 1 CONT.

RhIL-11 TREATMENT OF PSORIASIS

	Patient #202					Patient #203					Patient #208				
PSI score	11	11	9	9	9	10	10	7	4	4	7	6	6	5	
Weeks	0	1	4	8	12	0	1	4	8	12	0	1	4	8	
SCCA2	413	421	302	451	175	281	265	258	89	3	179	235	43	71	
P13	407	633	523	567	299	477	249	280	82	3	199	290	84	124	
SCCA1	98	127	152	61	59	68	112	123	46	12	84	101	57	56	
S100A9	624	580	474	623	501	404	348	466	392	12	455	345	261	306	
SPRR2A	514	401	420	532	312	219	226	237	180	11	194	191	99	101	
G1P2	147	116	129	100	34	26	14	21	6	2	7	10	3	3	
GJB2	68	83	85	55	31	38	58	45	23	9	36	50	26	18	
HAL	41	41	64	61	32	45	70	91	40	13	69	47	33	40	
IFI56	45	31	26	40	18	18	11	10	4	3	4	4	3	4	
MX1	88	92	91	70	38	33	29	22	12	4	21	20	7	11	
S100A12	17	9	18	9	4	20	19	12	5	2	9	10	4	4	
TGM3	56	65	50	80	69	61	13	28	33	7	55	25	8	18	
IFNRG7A	30	18	22	19	13	12	8	1	4	2	3	3	3	2	
HPBP17	25	48	36	35	28	90	27	38	36	10	37	18	9	7	
S100A7	613	609	489	666	531	465	455	519	518	86	513	384	352	359	
TGM1	46	63	51	36	31	47	24	32	20	4	22	24	6	11	
ATPIAL1	23	18	24	29	18	20	19	30	8	4	20	25	9	10	
LKYHYD	11	11	14	13	6	14	21	13	6	3	9	10	4	6	
SQLE	45	55	43	34	13	36	23	43	19	5	27	17	7	11	
KCNC3	17	7	9	10	5	14	7	8	4	2	4	5	3	3	
SPRR1B	455	420	366	533	322	325	219	203	183	57	149	180	90	118	
LGALS3BP	43	54	48	37	21	8	21	10	4	15	9	3	6		
PP13	20	18	21	18	6	21	4	9	2	4	6	3	3		
CYBA	17	11	19	30	12	8	9	18	7	2	6	9	3	6	
PRSS6	84	100	106	68	50	87	62	87	49	17	81	40	23	39	
S100A2	275	289	271	176	163	426	361	273	167	55	177	194	166	108	
P1SCR1	14	12	24	6	6	6	10	0	2	2	3	5	3	3	
KRT17	361	346	250	190	115	240	219	182	54	16	115	200	48	53	
ID1	113	82	138	73	48	58	59	94	52	16	48	48	16	32	
CRABP2	96	112	118	175	117	135	89	99	108	21	68	72	33	41	
FABP5	151	185	207	206	147	202	155	199	191	97	172	134	129	121	
RBI	14	13	14	15	10	11	8	9	8	3	6	6	4	4	
CSNK1A1	22	27	38	26	22	21	14	30	16	3	18	15	4	6	
IL4R	15	19	12	16	12	17	7	9	6	4	11	8	4	6	
STAT1	41	30	44	37	16	23	49	42	18	9	31	23	18	22	
TOPI	29	20	31	26	9	27	26	24	15	4	17	17	9	12	
NP	33	35	35	36	22	49	26	35	34	9	24	18	7	11	
GNA15	31	19	22	42	25	37	10	18	16	4	16	15	6	10	
PGD	18	7	18	17	6	15	6	13	10	2	6	8	2	4	
RANBP1	34	23	21	25	24	18	10	15	16	2	13	14	2	4	
K23B_PERML1	11	11	13	11	5	6	7	7	3	3	7	10	3	4	
UBE2F	15	9	7	11	7	17	4	9	3	3	5	4	3	3	
BENE	25	41	36	23	16	37	28	28	19	7	22	15	12	10	
IRAK1	54	45	40	44	33	55	38	36	32	12	37	22	23	37	
TUBB2	125	116	118	131	68	76	99	78	63	32	72	48	46	41	
ELP1	23	24	25	38	18	31	29	30	28	7	20	18	6	9	
IFI27SEP	188	189	182	300	163	118	76	78	133	23	60	66	27	45	
PCSK4	25	37	36	26	11	25	46	34	13	9	26	26	13	14	
K111_NUK34	41	46	47	50	25	48	32	47	31	5	33	25	6	12	
EIF5	15	14	16	15	9	12	12	13	9	3	10	8	4	5	
TSSC3	40	15	38	17	14	31	18	23	11	6	17	21	4	9	
LDLR	17	16	23	21	10	31	20	22	19	6	13	16	6	7	
GOT2	17	28	29	22	16	37	22	30	19	6	23	18	12	12	
GARS	43	56	60	66	35	50	80	71	53	26	65	45	44	38	
PHB	13	16	11	13	11	13	4	14	7	2	9	10	3	4	
EIF2B	27	42	32	49	27	52	27	39	35	9	26	20	14	13	
RAB1	20	22	23	27	13	21	12	17	21	3	13	10	4	5	
EFELL2	10	6	10	12	8	11	8	6	11	3	9	6	3	5	
STAT3	13	16	19	21	11	24	9	10	16	5	12	11	4	4	
PPP2CA	17	10	12	10	6	10	13	13	9	4	10	7	6	7	
OIAS	17	15	25	25	25	30	15	17	18	4	20	13	6	10	
UBECS	21	12	21	25	14	26	15	17	20	5	11	11	4	7	
EIF2A	16	13	14	17	14	28	13	14	15	5	14	10	6	8	
PSMB10	19	21	23	26	17	9	12	11	11	3	10	13	4	8	

FIGURE 2

Title: Compositions, Kits, and Methods for Identification, Assessment, Prevention, and Therapy of Psoriasis

Filed: Herewith

Inventor: William L. Trepicchio, et al. **Atty. Docket No.** GFN-5405

Attorney: Amy E. Mandragouras, Esq., Reg. No. 36,220 **MAHIVE & COCKFIELD, LLP, 28 State Street, Boston, MA 02109-1784**

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PRKM3	19	14	13	9	7	16	7	8	12	4	8	6	4	6
GSTP1	165	195	170	268	171	271	102	150	190	26	124	87	48	66
S100A11	117	86	121	119	90	106	85	61	94	23	67	77	17	37
CSTB	253	225	263	239	148	138	122	117	110	21	128	120	41	61
ATOX1	48	34	31	61	48	67	26	39	52	9	22	16	11	18
CDC25	25	28	25	21	17	13	15	7	8	3	9	9	6	5
LAD1	51	57	54	58	56	72	41	51	38	17	48	31	20	24
P55CDC	15	15	16	16	16	24	11	14	15	5	8	8	4	6
PRPHHH	29	32	35	52	38	45	7	38	50	7	28	16	4	15
PGAM1	111	84	101	121	83	114	143	106	92	56	103	100	45	67
TB3_1	11	13	9	12	9	13	11	11	13	4	9	8	6	6
SCY4A	8	6	11	5	5	7	8	7	2	4	5	7	3	4
E_23773	14	9	11	16	8	13	13	11	12	4	10	7	4	7
MDF1	9	8	12	6	6	6	9	7	4	3	8	6	3	4
CASP	18	13	18	35	16	17	13	21	26	3	6	6	3	5
GPX3	28	27	27	30	25	39	24	26	19	4	13	13	4	9
EIF5A	18	18	25	9	6	20	32	35	13	4	3	4	2	3
CBR	29	19	23	42	21	17	26	22	17	10	20	13	10	9
COX5A	36	29	43	43	27	35	30	36	26	10	33	23	13	16
HSN	100	111	89	97	68	75	84	71	77	32	63	49	43	34
PSMHSC7	41	29	37	61	33	52	25	24	43	12	26	22	10	15
UQCRCFS1	42	46	55	53	28	55	51	56	38	11	45	38	12	20
MSE55	13	7	11	15	12	26	12	12	19	4	9	8	4	6
CYB561	6	6	4	6	5	7	4	5	6	3	4	4	2	3
CDKN3	8	7	6	6	6	9	8	5	7	3	4	3	3	3
CD48	9	7	6	7	8	9	6	7	6	3	5	4	3	5
SFC23B	9	6	8	8	7	9	4	9	5	3	4	4	3	3
MAGEP15	18	17	24	15	13	20	15	25	16	7	20	15	5	7
DLD	9	6	6	9	6	11	11	10	9	4	7	6	5	4
P4HB	90	82	89	119	65	56	53	74	59	18	70	49	36	38
TP11	65	74	80	128	99	123	65	79	112	27	83	59	33	41
BTG3	25	15	24	27	18	20	18	22	20	8	25	15	6	12
ARF6	15	7	17	19	12	8	6	11	7	3	12	7	3	5
PYRIDK	10	6	3	7	5	7	2	3	2	2	10	8	3	4
ITBA2	28	14	16	16	17	9	7	9	5	1	10	8	3	4
CSNK1E	15	25	22	12	13	9	20	29	14	14	25	17	17	14
SDC4	18	14	14	19	19	35	20	20	43	18	20	6	9	14
TESK1	5	4	3	4	5	3	2	2	4	3	2	3	3	3
SPTAN1	6	5	4	8	8	6	4	4	12	4	4	4	3	4
METPEP	5	5	6	7	19	6	11	11	29	29	30	26	14	32
KRT2A	52	73	53	74	605	156	112	199	76	253	495	86	259	327
CRIP1	9	7	6	29	30	26	18	15	78	13	14	4	9	12
CST6	72	44	55	126	126	89	56	129	20	52	91	40	37	74
IGGFCBP	6	4	3	6	6	3	3	4	5	3	3	4	4	3

=genes that increase in gene expression greater than 2 fold when compared to uninvolved skin

—genes that decrease in gene expression greater than 2 fold when compared to uninvolved skin

FIGURE 2 CONT.

Title: Compositions, Kits, and Methods for Identification, Assessment, Prevention, and Therapy of Psoriasis Filed: Herewith
Inventor: William L. Tropicchio, et al. **Atty. I.D. No.:** GFN-5405
Attorney: Amy E. Mandragouras, Esq., Reg. No. 0007, LAHIVE & COCKFIELD, LLP, 28 State Street, Boston, MA 02109-1784
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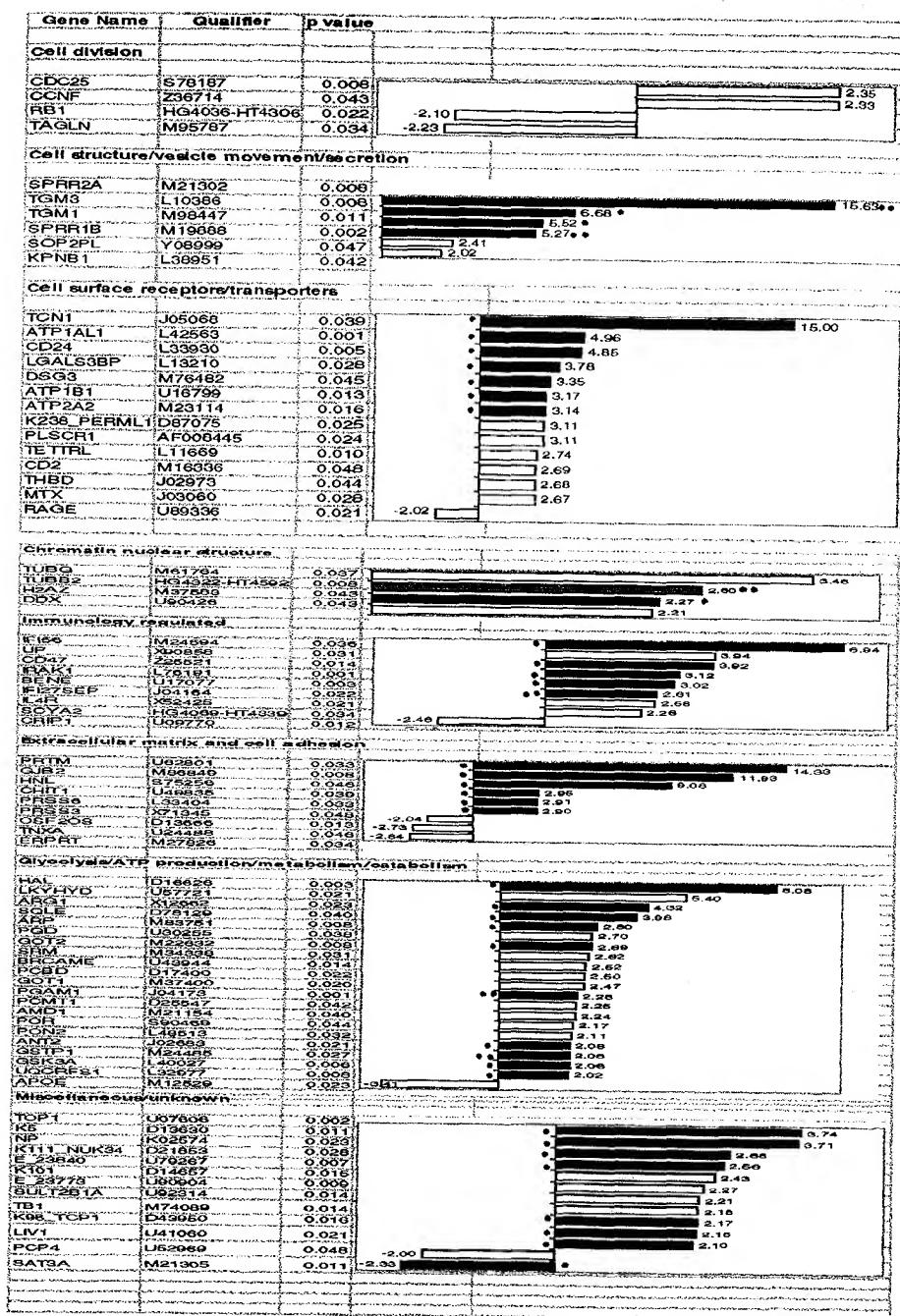


FIGURE 3

Title: Compositions, Kits, and Methods for Identification, Assessment, Prevention, and Therapy of Psoriasis **Filed:** Herewith
Inventor: William L. Trepicchio, et al. **Atty. Docket No.** FN-5405
Attorney: Amy E. Mandragouras, Esq., Reg. No. 36,207 **PATENT & TRADEMARK OFFICE &**
COCKFIELD, LLP, 28 State Street, Boston, MA 02109-1784
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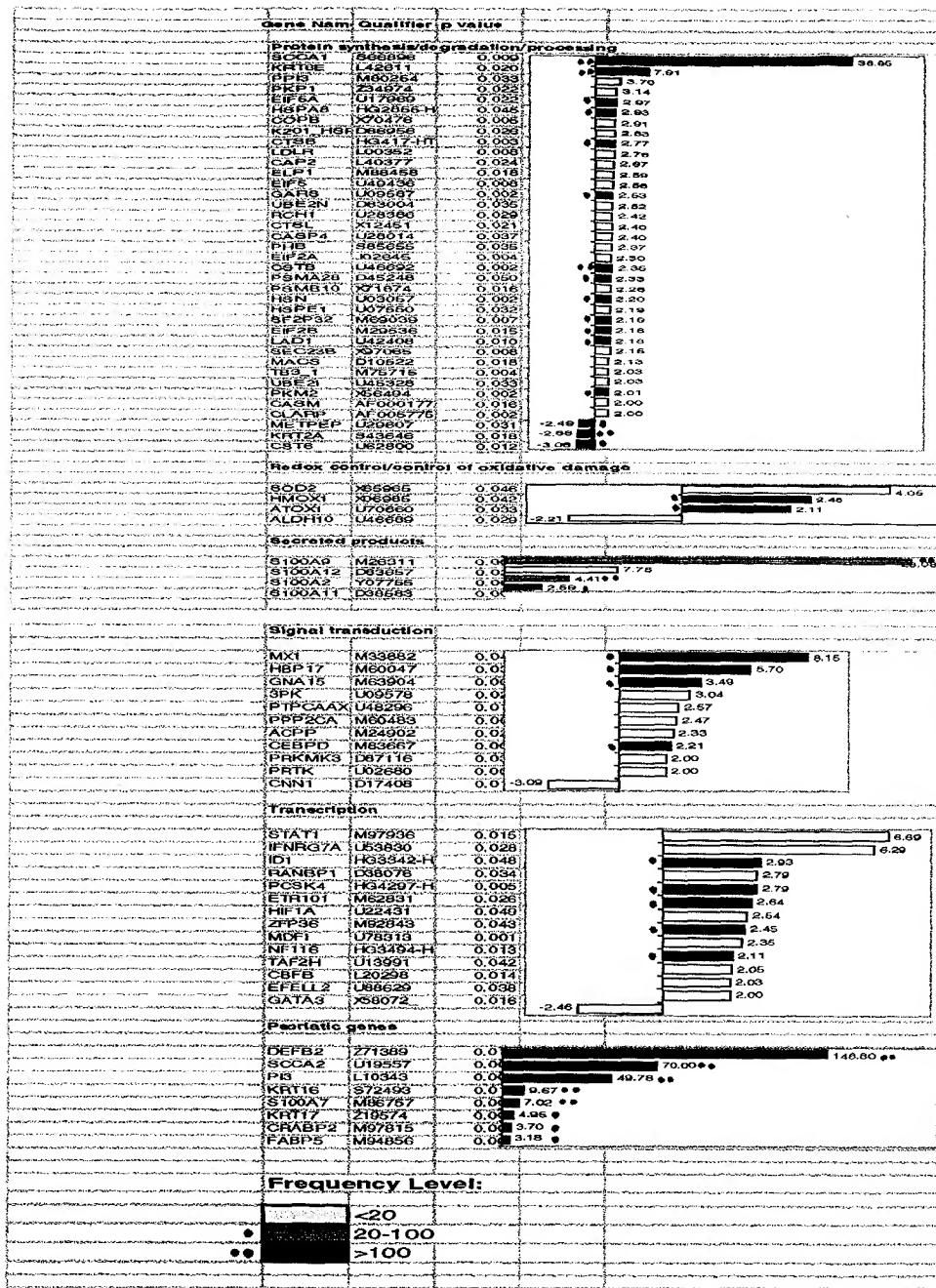
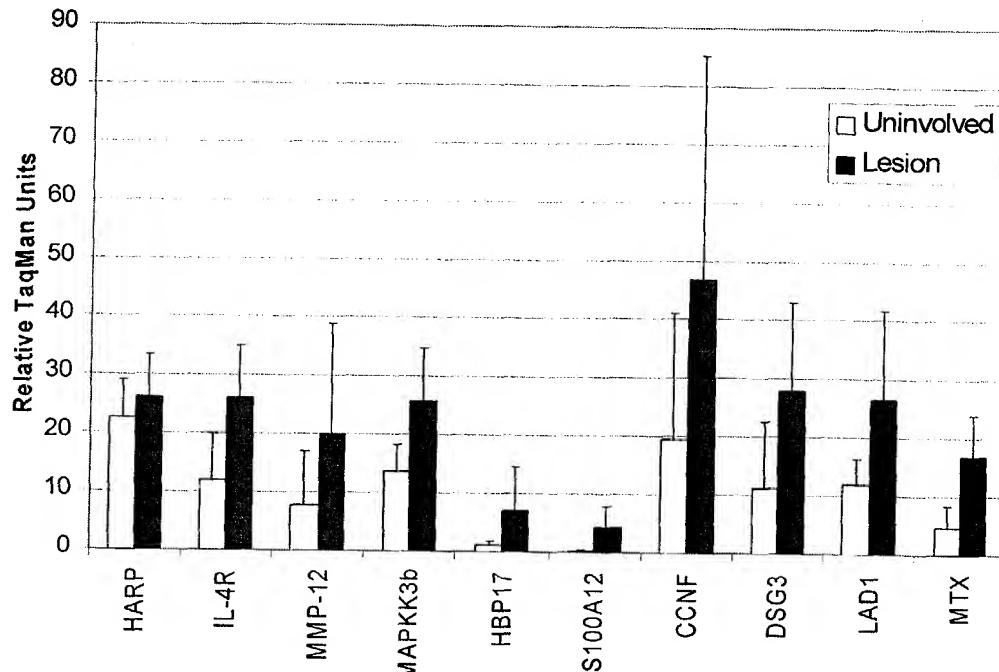


FIGURE 3 CONT.

A



B

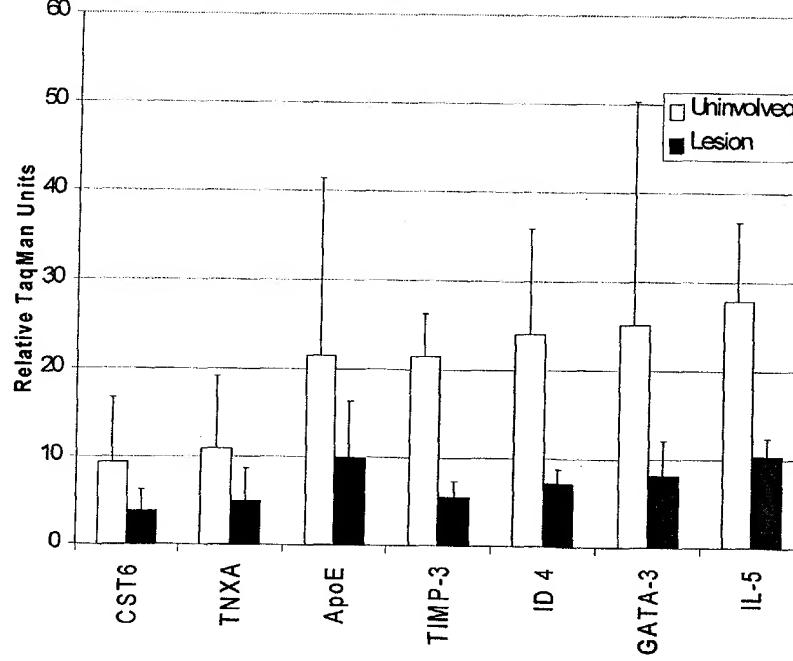
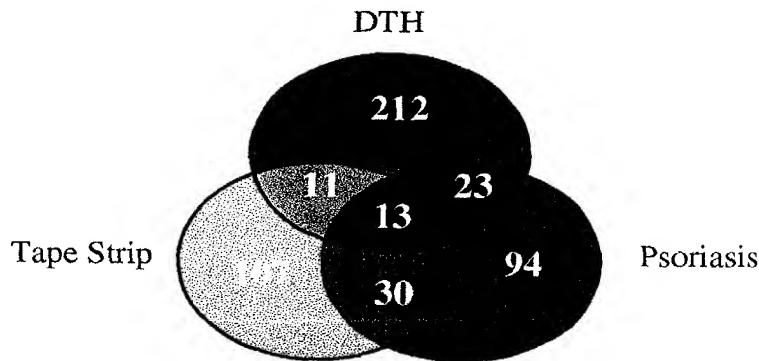


FIGURE 4

Title: Compositions, Kits, and Methods for Identification, Assessment, Prevention, and Therapy of Psoriasis **Filed:** Herewith
Inventor: William L. Tropicchio, et al. **Atty. Doc. No.:** GFN-5405
Attorney: Amy E. Mandragouras, Esq., Reg. No. 36, LAHIVE & COCKFIELD, LLP, 28 State Street, Boston, MA 02109-1784
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A



B

Changes <>2 in both DTH & TS					
name	qualifier	DTH	TS		
S100A9	M26311	DTH	6.916666667 **	15.7804878	*
SCCA2	U19557	TS	2.3 *	13.69230769	*
P13	L10343	DTH	8.266666667	7.761904762	*
DEFB2	Z71389	TS	6.555555556		
S100A7	M96757	DTH	6.512195122 **		
		TS	2.463414634 **		
KRT16	S72493	DTH	6.094462541 **		
		TS	6.64893617 *		
KRT1E	L42611	DTH	4.775956284 **		
		TS	6.169014085 *		
SPRR1B	M19888	DTH	4.26446281 *		
		TS	4.101123598 *		
S100A2	Y07755	DTH	2.73816156 **		
		TS	3.658415842 **		
GNA15	M63904	DTH	2.714285714		
		TS	3.2		
MX1	M33882	DTH	2.611111111		
		TS	3.833333333		
SRM	M34338	DTH	2.423076923 *		
		TS	7.111111111 *		
ZFP36	M92643	DTH	2.2 *		
		TS	2.285714286		
Frequency Level:					
		<20	20-100	>100	

FIGURE 5

Title: Compositions, Kits, and Methods for Identification, Assessment, Prevention, and Therapy of Psoriasis **Filed:** Herewith
Inventor: William L. Trepicchio, et al. **Atty. Dkt. No.:** GFN-5405
Attorney: Amy E. Mandragouras, Esq., Reg. No. [REDACTED], LAHIVE & COCKFIELD, LLP, 28 State Street, Boston, MA 02109-1784
Sheet 10 of 12
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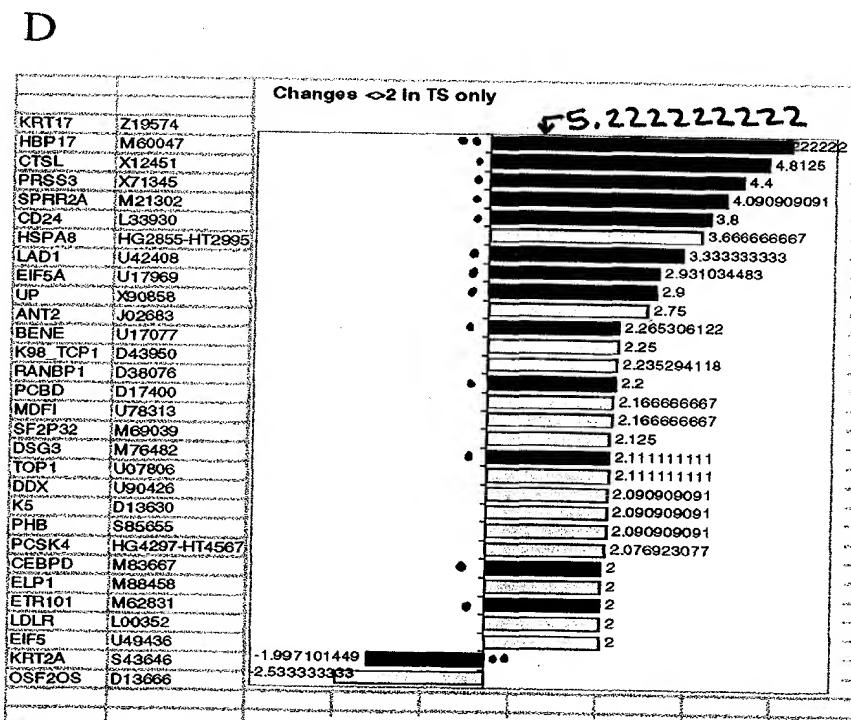
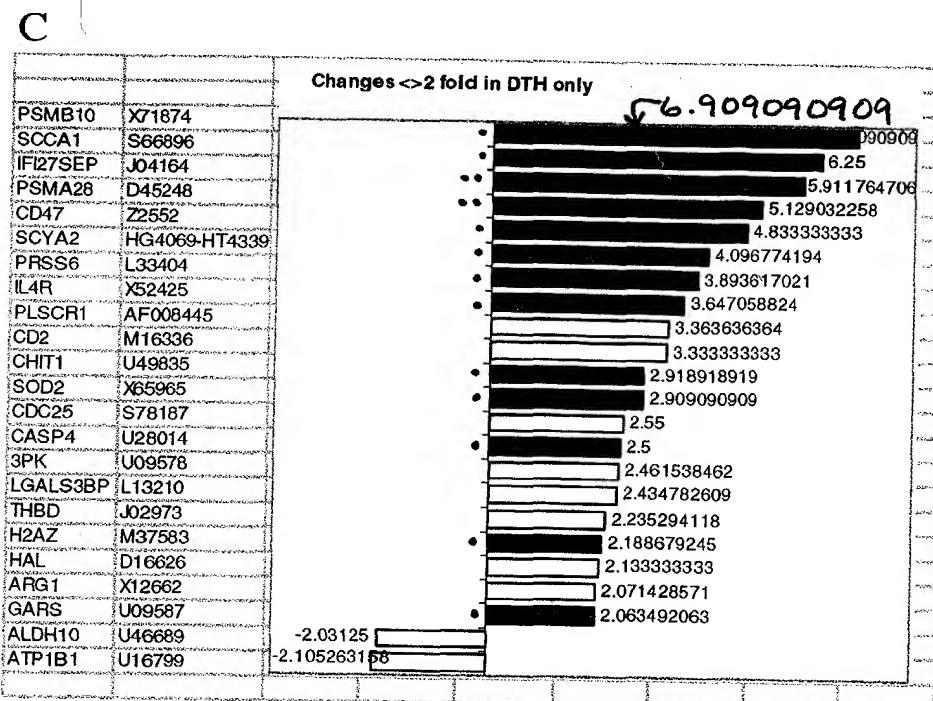
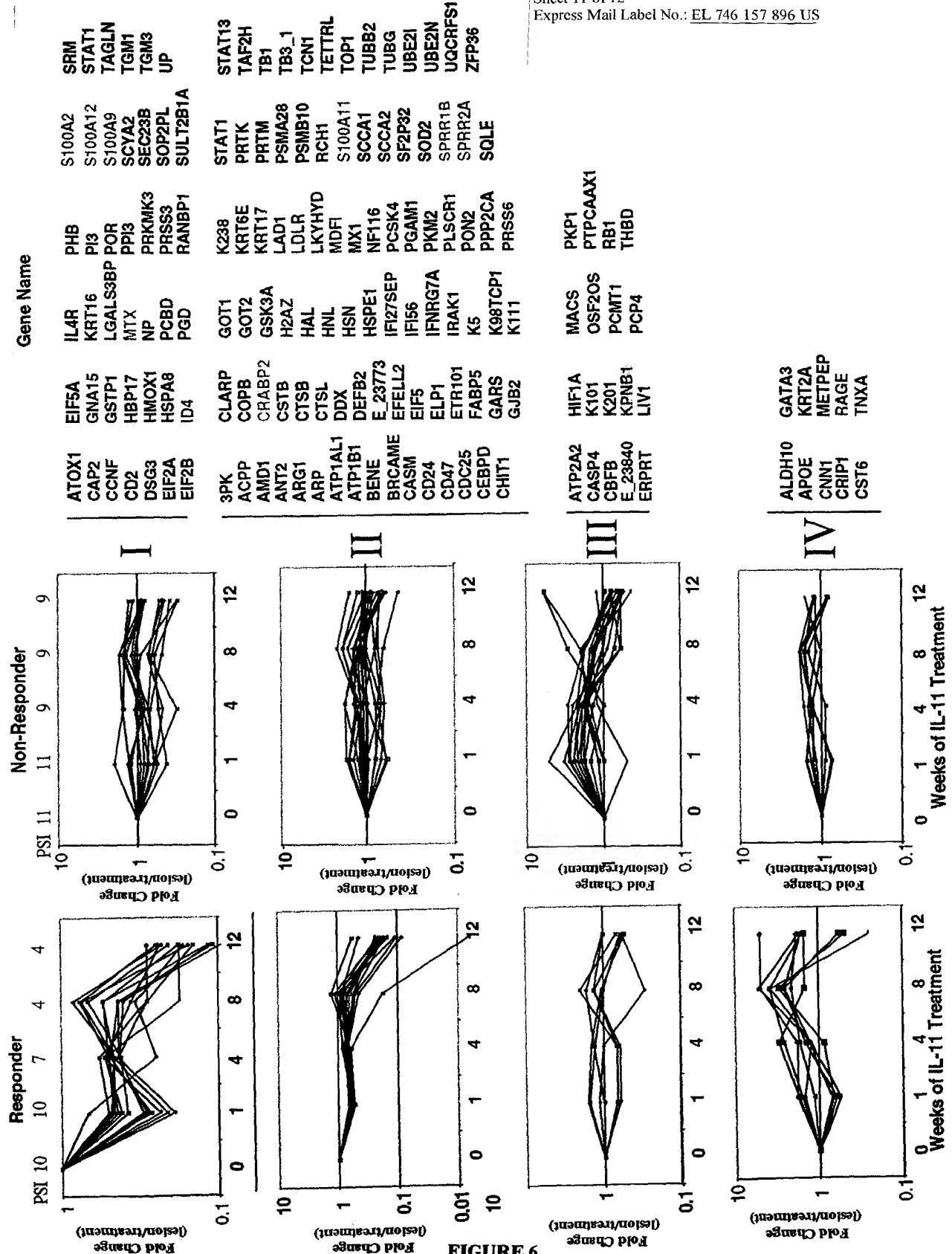


FIGURE 5 CONT.



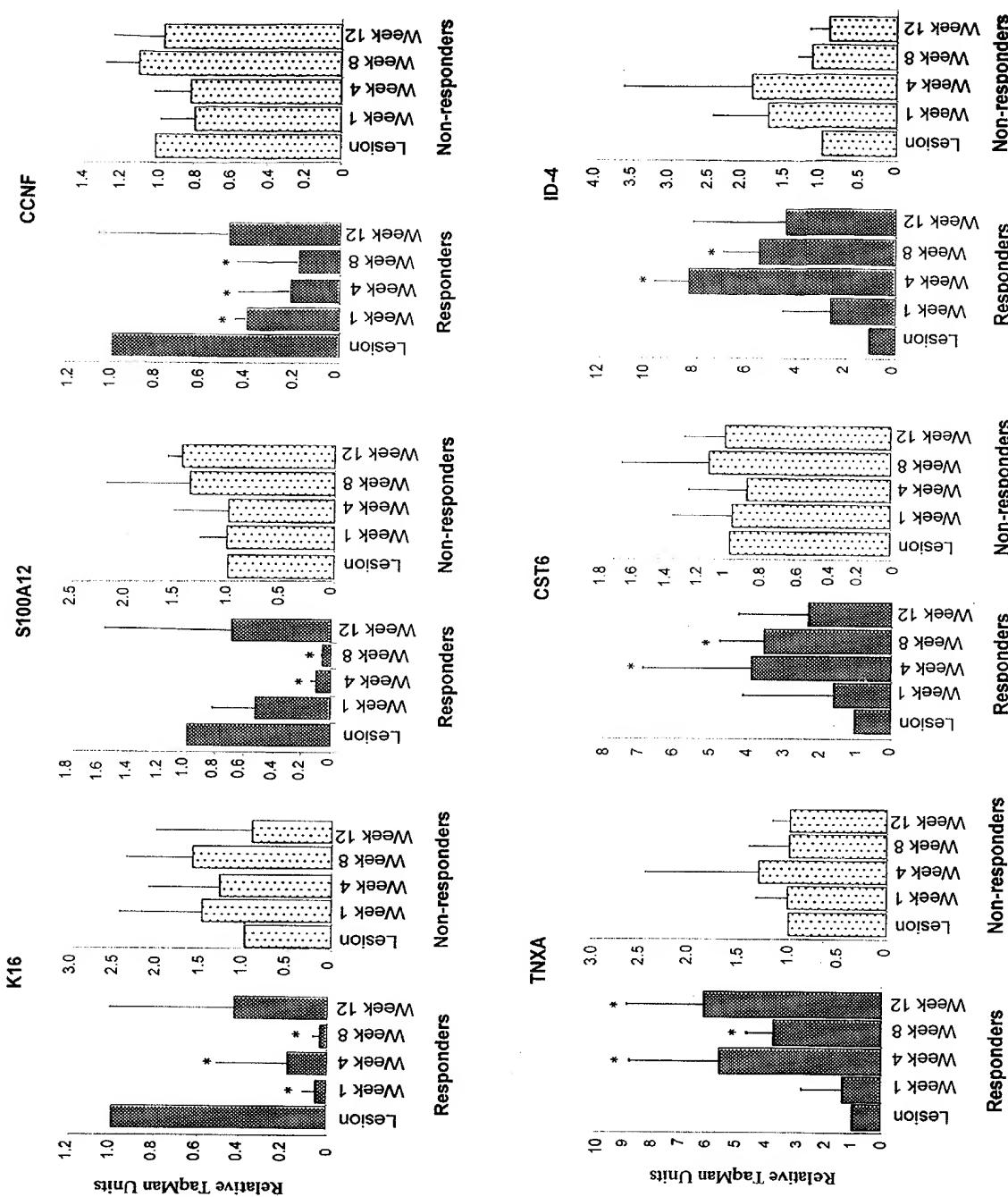


FIGURE 7